

AMENDMENT TO PROFESSIONAL SERVICES AGREEMENT

This Amendment to Professional Services Agreement (this "Amendment") is made as of the _____ day of September 2015, by and between the City of Boulder, a Colorado home rule city (the "City"), and CTC Technology and Energy, Inc. ("Contractor"). The City and Contractor may hereinafter be referred to individually as a "Party" or collectively as the "Parties."

A. The Parties entered into a Professional Services Agreement dated November 7, 2014 (the "Agreement"), by which Contractor provides professional Services in support of City technology initiatives; and

B. The Parties wish to amend the terms of the Agreement to add extra work pursuant to Section 3(b) of the Agreement and to clarify the promises and obligations of the Parties.

NOW THEREFORE, in consideration of the promises and obligations set forth below, the Parties agree to amend the Agreement as follows:

1. Pursuant to Section 3(b) of the Agreement, the Parties agree to add an addendum to the Statement of Work, Schedule A.1, attached hereto and incorporated herein by this reference, to provide additional Services in support of City technology initiatives.

2. A certificate of insurance shall be provided to the City evidencing coverage through and including December 31, 2016.

3. Except as amended herein, the Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the Parties have set their hands to this Amendment on the day and year above first written.

CONTRACTOR

By: _____

Title: _____

STATE OF COLORADO)
) ss.
COUNTY OF BOULDER)

Acknowledged before me, a notary public, this _____ day of September 2016, by Joanne Hovis, as President of CTC Technology and Energy, Inc.

Witness my hand and official seal.
My commission expires:

(SEAL)

Notary Public

CITY OF BOULDER

City Manager

ATTEST:

APPROVED AS TO FORM:

City Clerk

City Attorney's Office

SCHEDULE A.1
STATEMENT OF WORK

1. GENERAL

This Statement of Work is referenced in and incorporated into to the Professional Services Agreement between CTC Technology and Energy, Inc. ("Contractor") and the City of Boulder, a Colorado home rule municipality (the "City"), dated November 7, 2014 (the "Agreement").

2. SUMMARY OF PURPOSE

The purpose of the Agreement is to define the terms and conditions pursuant to which Contractor will perform a comprehensive broadband feasibility study for the City (the "Project").

3. DEFINITIONS

Not applicable.

4. NOTICES

Any notice provided pursuant to this Agreement shall be in writing to the Parties at the following addresses:

If to Contractor:

Joanne Hovis
President
CTC Technology and Energy, Inc.
10613 Concord St.
Kensington, MD 20895

If to the City:

Don Ingle
City of Boulder
Director of Information Technology
3065 Center Green Drive, 2nd Floor
Boulder, CO 80301

5. EQUIPMENT AND PROGRAMMING TO BE PROVIDED BY THE CITY

Not applicable.

6. OTHER CONTRACTOR RESOURCES

Not applicable.

7. DESCRIPTION OF WORK PRODUCT; DELIVERABLES; TASKS

Contractor shall be the City's independent adviser throughout the Project and shall develop realistic recommendations for enabling the City to realize its goals of ubiquitous, open access, Gigabit-class broadband for its citizens and local businesses.

Contractor has hands-on experience and expertise in every aspect of the City's scope of

work. Contractor will draw on its work with other municipal clients to help the City reach its objectives—including by developing appropriate benchmark data, assessing the City's opportunities, and analyzing both the local market and the community's interests.

As the following description of work tasks illustrates, Contractor's Project approach will involve methodical research, rigorous analysis, and regular communication.

A. Task 1 - Facilitate an on-site Project kick-off meeting

As a preliminary step, Contractor shall conduct a full-day, on-site strategy session. Contractor's Project team shall meet with City personnel and invited stakeholders to discuss Project goals and objectives, review relevant maps and documents, establish Project parameters, and address the Project team's primary questions and concerns to enable Contractor to understand the City's long-term vision and expected timeline. Contractor shall seek guidance on any potential hurdles or areas of concern, as well as insight into existing broadband service availability and the City's knowledge of incumbent service providers' plans for future expansion. During the strategy session, Contractor shall present an overview of relevant case studies and best practices in municipal broadband; discuss funding, financing, and partnership issues; and explain the evolution of municipal broadband efforts.

During the strategy session, Contractor shall:

- Introduce its team;
- Identify Project stakeholders;
- Review Project schedule, key milestones, and deliverables;
- Share relevant maps, studies, and documents;
- Discuss perceptions of the City's market for fiber-based services (including among residential, small business, and commercial/industrial users, as well as by federal agencies, the University of Colorado, and the Boulder Valley School District);
- Discuss available broadband data services in the City/region;
- Identify potential service gaps by sector (i.e., residential, small business, commercial/industrial);
- Review existing infrastructure assets (conduit, fiber, and so on);
- Identify growth areas and economic development targets in the City;
- Discuss potential City roles in broadband deployment; and
- Discuss potential public–private partnership models.

B. Task 2 - Evaluate current and future demand for broadband (needs assessment)

The City has rightly distinguished among its primary broadband user groups and stakeholders: the public sector (including the City itself, other regional government agencies, federal agencies, educational institutions, and potentially a municipal electric utility), business customers, other private sector stakeholders (representing digital divide concerns, healthcare providers, and other consumer groups), and broadband service

providers. Each of these stakeholder groups has different current broadband needs, and will have unique future demands.

Contractor shall conduct on-site interview meetings and teleconferences with representatives of the City's range of key stakeholders. Contractor shall prepare an appropriate list of questions for each interview subject with a goal of understanding its fiber needs, as well as constraints and challenges. Contractor will draw, too, on its knowledge of Boulder and the region, developed in its previous engagements with the City and other jurisdictions. Contractor shall take detailed notes on the discussions and will use the insights Contractor develops to inform subsequent Project tasks.

Given the parallels in the steps needed to assess the broadband needs for each of these stakeholder groups, Contractor shall engage on these tasks in parallel since performing like tasks in parallel is time- and cost-effective and this approach enables it to identify common concerns among user groups.

Except as may be later agreed upon by the Parties, Contractor shall conduct the in-person interviews over a period of a few days in Boulder. The City shall assist in identifying the participants, scheduling and confirming the interviews, and arranging a suitable meeting place for the interviews.

i. Interview key public stakeholders

To assess the City's operational needs for fiber connections and service, Contractor shall conduct 12 on-site interviews with representatives of key City departments. For each of these interviews, Contractor shall explore specific current fiber needs and future goals.

Contractor shall also have conversations, either in-person or through teleconferences, with representatives of federal agencies that have a presence in Boulder (e.g., National Center for Atmospheric Research, National Institute of Standards and Technology, the National Oceanic and Atmospheric Administration), the University of Colorado, and the Boulder Valley School District.

ii. Facilitate discussion groups with businesses and business organizations

Contractor shall conduct six discussion groups with representatives of local businesses and business organizations, which are key private stakeholders in the City's broadband planning, to understand the broadband market for the City's business customers and to identify the participants' specific broadband needs. During the discussion groups, Contractor shall discuss the potential benefits of competition in the local market, including improved customer service and reliability.

The types of questions Contractor shall explore at the discussion groups include the following:

- What types of broadband services do the businesses currently use?
- What limitations do these businesses see with the available services?
- What are the businesses' expectations for current and future broadband needs, and how well do current providers meet these needs?
- How aware are businesses of their available broadband options?

- How likely would the businesses be to purchase services from a new provider?

iii. Facilitate discussion groups with other private stakeholders

Contractor shall facilitate separate discussion groups with private stakeholders outside of the business community, e.g., residents and organizations who have an interest in addressing digital divide issues, healthcare providers, advocacy groups, non-profits, consumer groups, and other interested stakeholders. Contractor shall conduct six discussion groups with representatives of relevant private stakeholders.

iv. Facilitate discussions with broadband providers

Discussions with broadband service providers are an opportunity to explore potential partnerships and joint opportunities—and the enormous shared benefit that might result from creative planning. While service providers are typically reluctant to discuss competitive details about their business (e.g., customer demand, take rates, future buildout plans), in Contractor's experience many providers are interested in partnering with the public sector under a variety of models.

With that approach as the framework, Contractor shall seek to have constructive conversations with incumbent and competitive service providers in the residential, small business, and large enterprise markets (e.g., Comcast, CenturyLink, MegaPath, Zayo, Level3, etc.).

v. Facilitate discussions with additional stakeholders identified by the City

In addition to the stakeholder engagement discussions identified above, Contractor shall consult and engage with a wide range of additional stakeholders that including, but not limited to, the following:

1. Community Stakeholders:
 - a. The City's broad business community
 - b. Those representing digital divide concerns
 - c. Regional governments (Longmont, Boulder County, Boulder Valley School District (BVSD), etc.)
 - d. Boulder Regional Administration Network (BRAN) partners (Univ. of Colorado, federal labs)
 - e. Community groups (e.g., Plan Boulder, Better Boulder, Open Boulder)
 - f. Private/residential stakeholders (to be identified)
 - g. Students (University of Colorado, BVSD, Naropa University, etc.)
2. Organizational Stakeholders:
 - a. Boulder Energy Future executive team
 - b. Broadband Working Group members
 - c. The City's IT Department
 - d. Special organizational stakeholders (e.g., public safety, existing utilities, engineering, land use)
 - e. Schneider Electric (currently conducting the City's energy municipalization technology gap assessment)

vi. Gather insight related to utility service

Contractor shall gather information regarding the City's utilities' potential broadband needs (e.g., for utility monitoring, control, outage management, and other operational considerations) through City-facilitated interviews and a detailed review of the City's functionality requirements, including any gaps in that functionality. If Contractor is

unable to develop specific insight in terms of utility broadband needs, Contractor shall include in its assessment a set of baseline needs that reflect its nationwide experience supporting municipal utilities with broadband planning.

C. Task 3 - Assess the City's current broadband infrastructure (assets) and market (services)

As a foundational element of the analysis, Contractor shall assess both the existing broadband infrastructure and the current competitive environment for broadband services in Boulder and the region. Contractor shall explore the residential and business/commercial sectors, with an emphasis on understanding availability and uncovering issues related to service gaps and the digital divide.

i. Analyze existing broadband infrastructure

Contractor shall evaluate the current broadband assets in the City through a combination of desk and field surveys. As an initial step, Contractor shall review any relevant maps, studies, documents, or data that the City can share. A Contractor outside plant engineer shall then conduct an extensive desk survey using the City's GIS maps, Google Earth imagery, and other relevant sources.

To supplement the desk survey, Contractor shall conduct up to five days of field verification and site surveys of representative portions of the City. This survey shall include evaluation of representative sites, with field survey work focusing on critical sites, as well as sites that Contractor believes may be particularly challenging, based on discussions with the City and Contractor's previous experience in similar projects.

Contractor shall photograph, sketch, and take detailed notes on topography, rights-of-way, road crossings, railroad crossings, "hydro lines" (i.e., creeks, streams, rivers), and "hydro areas" (i.e., wetlands, bodies of water). The field survey shall include measuring the green space available within the right-of-way for placement of conduit, and recording other pertinent details, including:

- Storm drains and street lights
- Edge of pavement
- Water and sewer lines
- Required test pits
- Slack storage, splice cases, pedestals, and vaults
- Required hardware

Contractor shall survey pole lines to determine their ability to support additional fiber attachments, the need for make-ready and pole replacement, and the estimated cost. Contractor shall note any potential barriers to construction, as well as the permits necessary to construct fiber infrastructure. Through the field survey, Contractor shall identify specific details related to using the City's rights-of-way, as well as targets of opportunity for connecting additional sites or providing physical path redundancy to enhance communications survivability between sites.

ii. Prepare competitive assessment of broadband services

Contractor shall determine which vendors are active in the area, which services are available, and what residents and businesses pay for varying levels of service. Contractor shall explore not just starter and enticement pricing, but also the actual

pricing for established customers.

Contractor's comprehensive competitive assessment shall include:

- Developing a list of current broadband providers, including the costs for services
- Determining the location, condition, and type of available infrastructure access points (e.g., carrier hotels, points of presence, interconnection points)
- Identifying providers of high-capacity transport services (i.e., Layers 1, 2, and 3)
 - Distinguishing the difference between facilities-based and non-facilities-based providers, identifying providers' current offerings
 - Identifying mid-range services tailored to the small and start-up business market
- Performing a comparative evaluation of the incumbent systems, with available data, to determine capability to meet residential and small business broadband needs
 - Service characteristics
 - Monthly recurring costs
 - One-time costs
 - Limitations and issues

Where broadband infrastructure is not available, Contractor shall identify, to the extent possible, what business customers have to pay the incumbent providers in order to get the necessary infrastructure built to them.

Contractor shall use its best efforts to use this service and pricing analysis to approximate what kind of infrastructure is available in each part of the City—to supplement and confirm the results of its desk and field surveys (see above). Contractor shall approximate this inventory based on service and pricing information because the industry does not share data on its infrastructure. Contractor shall make highly-educated estimates, based on its experience, of competition gaps, affordability gaps, and service gaps.

In developing the City's feasibility study and strategic plan, Contractor shall look not only at the range of broadband needs, but also the gaps in available and affordable services for business and institutional users since regions that are reported to be "well-served" commonly still have supply issues, especially for small businesses, including non-ubiquitous broadband availability, the excessive cost of getting a new "drop" connection to an office or other facility, and available services that are not well suited to small businesses. Taken together, these issues and service gaps will drive the development of a strategy and roadmap for future City initiatives.

iii. Benchmark the City's broadband availability

To develop comparative data to guide its strategic recommendations, Contractor shall benchmark residential and small business broadband service availability in the City

against comparable communities nationwide. Using data and insight developed through its competitive assessment, Contractor shall compare factors such as:

- Current broadband providers, including the costs for services
- Providers of high-capacity transport services (i.e., Layers 1, 2, and 3)
- Available mid-range services tailored to the small and start-up business market
- Service characteristics and costs
- Limitations and issues

D. Task 4 - Evaluate potential role of existing City assets in enabling broadband

Contractor shall develop short-, medium-, and long-term strategies that will enable the City to use existing assets to help fill broadband gaps, improve service quality and synchronous speeds, and enhance competition. For each strategy, Contractor shall offer a high-level assessment of potential risk.

Contractor shall develop analysis and strategies that take into account the current market and customer needs to help the City achieve its broadband infrastructure goals - empowering citizens and local businesses with ubiquitous access to Gigabit-class bandwidth - while lowering the barriers to investment for private sector partners. Contractor shall focus on how the City can use existing assets to spur private investment, as well as what modest investments the City could make to attract larger private investments over time. Contractor shall also develop strategic guidance on how to take advantage of any upcoming construction (whether by the City or a private entity) to enable the City to cost-effectively expand its infrastructure and meet its goals.

Contractor shall provide high-level strategic guidance on how to take advantage of future construction— potentially including recommendations regarding enacting citywide policies.

i. Consider opportunities and challenges related to the use of the electric distribution system

Contractor will look at the potential use of electric assets as one variable and analyze how those assets would impact the business model, technical model, and financial projections.

ii. Consider opportunities and challenges related to open access

Contractor shall consider opportunities and challenges presented by open access network models and business planning and shall evaluate potential areas of vulnerability with regard to the open access model, which will then help shape the City's strategy and approach to developing business relationships with ISPs.

E. Task 5 - Evaluate potential regional approach to enabling broadband

Contractor shall assess the City's opportunities for pursuing a regional approach to deploying community broadband. Contractor shall begin by evaluating the current regional elements of the City's fiber network, including routes beyond the City limits (e.g., in other areas of Boulder and Jefferson counties), its fiber connections to the City of Longmont, its co-location/peering site in Denver, and its interconnection with the Boulder Research and Administration Network (BRAN).

Contractor shall consider opportunities (technical, operational, and otherwise) for achieving the City's goals in concert with regional cooperation, investment, and planning.

F. Task 6: Prepare engineering analysis and cost estimation regarding potential network implementation

Contractor engineers shall conduct a comprehensive engineering analysis to determine how the City's existing fiber and conduit resources could be used to support middle-mile and last-mile fiber implementation — either by the City itself or a private sector partner.

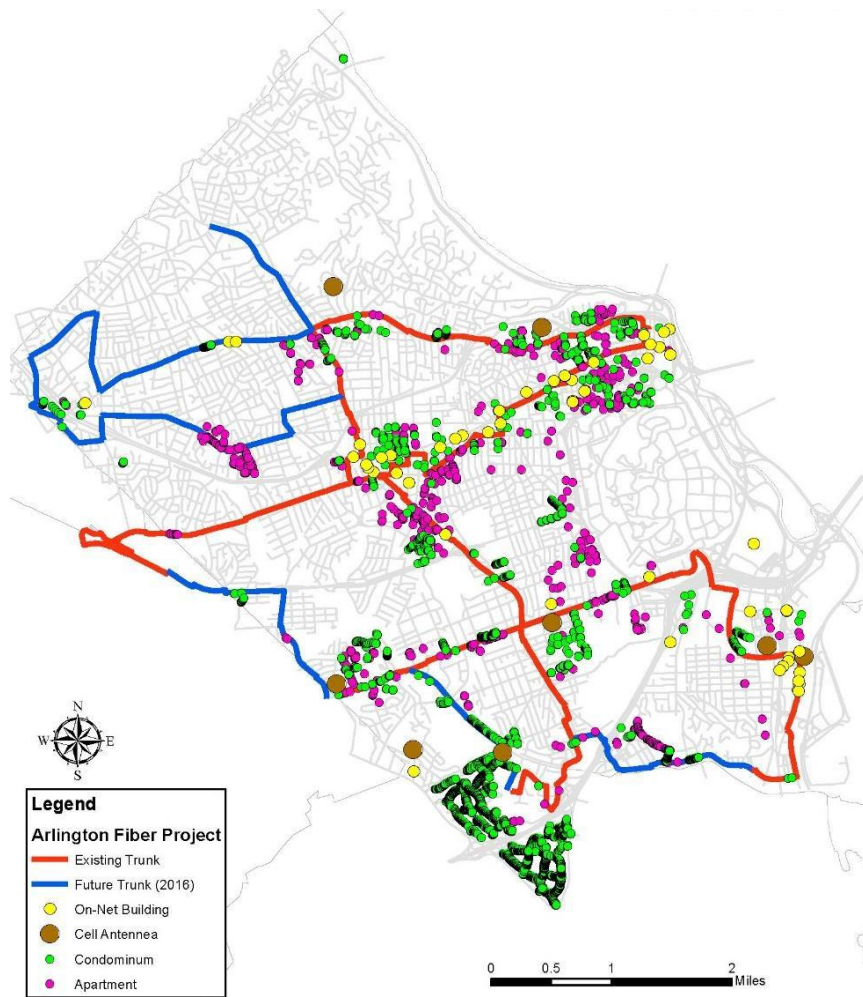
Contractor shall identify the potential positive impacts (including cost reduction and improved time-to-market) that the City's existing infrastructure would have on a private or public sector network deployment. Contractor will focus on developing key data on costs, logistics, and routing that would improve the investment equation for a private partner.

The engineering analysis shall illustrate the use of existing (surplus) fiber and conduit to support middle-mile and last-mile extensions to residential and business users.

Based on that analysis, Contractor shall develop a high-level estimate of likely costs and timelines for construction and implementation, whether by the City or a private partner. Contractor shall include in its analysis all existing infrastructure (including fiber and conduit, but also rights-of-way access and locations for network hubs and other necessary infrastructure) that Contractor believes the City can use to support the middle-mile and last-mile deployment.

Contractor shall also identify areas where relatively small investments in conduit or fiber extensions might add significant value to the City's infrastructure in terms of economic development goals. (See sample map below.) To assist in the mapping effort, Contractor shall obtain business lists and background data from various sources.

Figure 1: Sample Map of Value-Added Network Extensions



To survey candidate fiber routes and develop cost estimates and to identify the most efficient and effective way to connect the City's existing infrastructure to these new routes, Contractor's engineers shall perform onsite inspections of candidate fiber routing, including examination of existing conduit and fiber resources. Contractor shall identify routing for potential fiber topologies and shall consider construction and design practices to minimize overall cost, including planning construction in conjunction with capital improvements in the rights-of-way (e.g., road work, sidewalk replacement programs).

Contractor shall include in its field work an evaluation of representative portions of Xcel Energy's pole lines and, if feasible, shared manholes and other accessible assets.

Contractor shall develop high-level cost estimates on a baseline set of middle-mile and last-mile fiber routes, and identify incremental costs for enhancing construction methodology to include additional conduit capacity and access points to facilitate reduced-cost construction for potential future expansion and site additions. Contractor shall also identify areas of risk and a likely range of costs and schedules.

Contractor is not required to provide a blueprint-level network design or cost estimate. Rather, Contractor shall provide an analysis of existing infrastructure, a conceptual design, high-level maps, and a system-level overview of the potential infrastructure—which in turn will become a roadmap for financial analysis and business modeling, and for

future decisions, potentially including detailed engineering and contracting with private sector service providers.

G. Task 7 - Develop and administer a Request for Information (RFI)

Contractor shall draw on the insights it develops in the previous tasks, as well as its extensive experience writing RFIs related to municipal broadband partnerships, to prepare a focused RFI that outlines the City's current state and future goals, and effectively communicates the City's range of partnerships interests.

Contractor shall assist the City in administering the RFI process, from distribution through follow-up. Contractor shall review and analyze the RFI responses, develop an evaluation matrix, and provide its best preliminary judgment about the technical, financial, and political feasibility of the various options presented. Contractor shall also assist the City in evaluating the RFI responses and in all follow-up discussions and communications with the respondents.

H. Task 8 - Prepare and present a comprehensive written Project report

Contractor shall deliver a comprehensive Broadband Feasibility Study that recommends a strategic approach and a roadmap of concrete actions for the City's consideration. The report will include all of the data, insights, and recommendations developed in the previous tasks.

Contractor shall provide the City with an electronic draft of its report, which will include a concise narrative supported by tables, graphics, and maps as appropriate. Contractor will incorporate feedback from reviewers and deliver an electronic version of the final report.

I. Ongoing Tasks

Contractor shall deliver weekly Project status updates via e-mail or teleconference and shall be available to the City's Project team as needed throughout the engagement. During these communication opportunities, the Parties will confirm the Project's scope, quality of incremental deliverables and conformance with the payment schedule.

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8. SPECIFICATIONS

Not applicable.

9. AMENDMENTS TO THE GENERAL TERMS OR OTHER SPECIAL TERMS, IF ANY

Not applicable.

10. PAYMENT TERMS AND CONDITIONS; OUT OF POCKET EXPENSES; MODE OF PAYMENT

- A. Payment Terms and Conditions. Unless services in addition to those specified in Section 7 are subsequently agreed upon in writing, the total amount paid by the City to Contractor pursuant to this Agreement shall not exceed the sum of \$150,000.00. The compensation and expenses for the Services shall be calculated using the actual time required by Contractor and its staff to perform the Services. Contractor's billing rates are set forth in Table 2, below. The City will pay Contractor for the Services in

accordance with the Payment Schedule. All payments to Contractor are contingent on Contractor's satisfying the Deliverables/Milestones set forth in the Payment Schedule.

- B. Out of Pocket Expenses. Contractor's charge for the Services includes all out-of-pocket expenses, with the exception of travel expenses. Travel arrangements will be made by Contractor, but only City pre-approved travel expenses will be reimbursed.
- C. Method of Payment. The City shall pay by check payable to Contractor, except in those instances where the City and Contractor mutually agree that payment will be by credit card.

11. PAYMENT SCHEDULE

The City shall pay Contractor following the successful completion of each of the eight (8) tasks included in Section 7 of this Statement of Work, in accordance with the provisions of Section 10, above, and as further delineated in Table 1 below.

All payments to Contractor are contingent on the tasks in Section 7 of the Statement of Work being completed to the City's satisfaction. Invoices for payment shall be presented to the City after Contractor has received the City's written confirmation to Contractor that the task has been satisfied. The Contractor shall provide invoices for deliverables completed, plus any pre-approved reimbursable expenses. Invoices that include charges for reimbursable expenses shall include a detailed description of the expense. All reimbursable, out-of-pocket expenditures by Contractor must be pre-approved by the City.

Table 1 – Fee and Payment Schedule

| Task | CTC Staff Hours | | | | | Totals | |
|---|-----------------|----------------------------|-------------------------|-------------------------|--------|-------------|------------------|
| | Director | Principal Engineer/Analyst | Senior Project Engineer | Senior Engineer/Analyst | Staff | Total Hours | Total Fees |
| <i>Hourly Rate</i> | \$ 170 | \$ 160 | \$ 150 | \$ 140 | \$ 130 | | |
| Task 1: Facilitate on-site workshop | 16 | 16 | 16 | 4 | 6 | 58 | \$ 9,020 |
| Task 2: Evaluate current and future demand (needs assessment) | 40 | 80 | 60 | 40 | 40 | 260 | \$ 39,400 |
| Task 3: Assess the City's current broadband infrastructure (assets) and market (services) | 32 | 16 | 8 | 24 | 8 | 88 | \$ 13,600 |
| Task 4: Evaluate potential role of existing City assets in enabling broadband | 32 | 40 | 16 | 16 | 8 | 112 | \$ 17,520 |
| Task 5: Evaluate potential regional approach to enabling broadband | 30 | 15 | 2 | 15 | 8 | 70 | \$ 10,940 |
| Task 6: Prepare engineering analysis and cost estimation regarding potential network implementation | 40 | 60 | 24 | 32 | 8 | 164 | \$ 25,520 |
| Task 7: Develop and administer a Request for Information (RFI) | 40 | 16 | 16 | 16 | 8 | 96 | \$ 15,040 |
| Task 8: Prepare and present a comprehensive written project report | 24 | 16 | 24 | 40 | 24 | 128 | \$ 18,960 |
| <i>Totals:</i> | 254 | 259 | 166 | 187 | 110 | 976 | \$150,000 |

Contractor further agrees to honor the following standard hourly rates during the term of the agreement:

Table 2 – Standard Hourly Rates

| Labor Category | Rate |
|---|-------------|
| Director of Business Consulting / Engineering | \$170 |
| Principal Analyst / Engineer | \$160 |
| Senior Project Analyst / Engineer | \$150 |
| Senior Analyst / Engineer | \$140 |
| Staff Analyst / Engineer | \$130 |
| Communications / Engineer Aide | \$ 75 |

12. SCHEDULE OF DELIVERABLES/TASKS

Table 3, below, illustrates the projected six-month Project timeline, including the beginning and end dates (by week) of all tasks.

Table 3 – Project Schedule by Task

| Task | Week | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| Task 1: Facilitate on-site workshop | | | | | | | | | | | | | | | | | | | | | | | | |
| Task 2: Evaluate current and future demand (needs assessment) | | | | | | | | | | | | | | | | | | | | | | | | |
| Task 3: Assess the City's current broadband infrastructure (assets) and market (services) | | | | | | | | | | | | | | | | | | | | | | | | |
| Task 4: Evaluate potential role of existing City assets in enabling broadband | | | | | | | | | | | | | | | | | | | | | | | | |
| Task 5: Evaluate potential regional approach to enabling broadband | | | | | | | | | | | | | | | | | | | | | | | | |
| Task 6: Prepare engineering analysis and cost estimation regarding potential network implementation | | | | | | | | | | | | | | | | | | | | | | | | |
| Task 7: Develop and administer a Request for Information (RFI) | | | | | | | | | | | | | | | | | | | | | | | | |
| Task 8: Prepare and present a comprehensive written project report | | | | | | | | | | | | | | | | | | | | | | | | |

Vendor Staff Assignments/Hours

The following Table 4 illustrates Contractor's staff assignments and estimated hours for each task. The individuals identified in Form 5 are the actual staff who will be performing this work (supported, as required by the Project timeline, by Contractor's qualified staff of engineers and analysts). As with any engagement of this size and complexity, the actual hours required for each task may vary; Contractor reserves the right to reallocate staff and hours among the tasks, so long as the total Project cost is not exceeded.

Table 4 – Staff Assignments by Task

| Task | CTC Staff Hours | | | | | Totals |
|---|-----------------|-----------------------------|-------------------------|--------------------------|------------|-------------|
| | Director | Principal Engineer/ Analyst | Senior Project Engineer | Senior Engineer/ Analyst | Staff | Total Hours |
| <i>Hourly Rate</i> | \$ 170 | \$ 160 | \$ 150 | \$ 140 | \$ 130 | |
| Task 1: Facilitate on-site workshop | 16 | 16 | 16 | 4 | 6 | 58 |
| Task 2: Evaluate current and future demand (needs assessment) | 40 | 80 | 60 | 40 | 40 | 260 |
| Task 3: Assess the City's current broadband infrastructure (assets) and market (services) | 32 | 16 | 8 | 24 | 8 | 88 |
| Task 4: Evaluate potential role of existing City assets in enabling broadband | 32 | 40 | 16 | 16 | 8 | 112 |
| Task 5: Evaluate potential regional approach to enabling broadband | 30 | 15 | 2 | 15 | 8 | 70 |
| Task 6: Prepare engineering analysis and cost estimation regarding potential network implementation | 40 | 60 | 24 | 32 | 8 | 164 |
| Task 7: Develop and administer a Request for Information (RFI) | 40 | 16 | 16 | 16 | 8 | 96 |
| Task 8: Prepare and present a comprehensive written project report | 24 | 16 | 24 | 40 | 24 | 128 |
| <i>Totals:</i> | <u>254</u> | <u>259</u> | <u>166</u> | <u>187</u> | <u>110</u> | <u>976</u> |

13. ACCEPTANCE AND TESTING PROCEDURES

Not applicable.

14. LOCATION OF WORK FACILITIES

The City shall provide City office space and support, as it agrees may be appropriate, at its Boulder facility.

